

## **The United States Comments on the Definition of *Animal Welfare***

The United States takes this opportunity to comment on the definition of *animal welfare* as recently adopted at the 76<sup>th</sup> General Session of the World Organization for Animal Health (OIE). As was the case with other Member countries, the United States did not have adequate time to consult with its stakeholders nor adequate opportunity to properly review the new definition which was only proposed for the first time in April just prior to the May General Session following the meeting of the Terrestrial Animal Health Standards Commission. The United States asks the OIE that when new text is presented for comment, that adequate time be given to Member countries so that the proposals can be properly reviewed by each country.

The definition of *animal welfare* as adopted in May 2008 reads as follows:

*Animal Welfare*: means how an animal is coping with the conditions in which it lives. An animal is in a good state of welfare if (as indicated by scientific evidence) it is healthy, comfortable, well nourished, safe, able to express innate behavior, and if it is not suffering from unpleasant states such as pain, fear, and distress. Good animal welfare requires disease prevention and veterinary treatment, appropriate shelter, management, nutrition, humane handling and humane slaughter/killing. “Animal welfare” refers to the state of the animal; the treatment that an animal receives is covered by other terms such as animal care, animal husbandry, and humane treatment.

**General Comment:** The proposed definition is overly broad because it goes beyond defining the term *animal welfare* and includes specific conditions required for the animal to achieve “good animal welfare”. As the definition clarifies, the state of the animal’s welfare is separate from the treatment and conditions provided to the animal. The determination of components required to achieve the minimum acceptable level of animal welfare is best left to the specific OIE welfare guidelines that will “elaborate recommendations and guidelines covering animal welfare practices, reaffirming that animal health is a key component of animal welfare.”

Additionally those guidelines must be science-based pursuant to OIE’s mission related to animal welfare:

“to provide international leadership in animal welfare through the *development of science-based standards and guidelines*, the provision of expert advice and the promotion of relevant education and research.”

The United States, therefore, suggests the following specific changes to the adopted definition (suggested language is shown as double-underlined and deleted language is shown as strike through):

### **Comment by Sentence:**

#### *Animal welfare:*

Means how an animal copes with the ~~conditions~~ environment in which it lives. Animals may use a variety of behavioral and physiological methods when trying to cope with a stressor within their environment.

- The United States recommends replacing the word “conditions” with the word “environment” for the following reasons:
  - The word “environment” is used in the peer reviewed published definition of animal welfare by Broom (1991): “The term ‘welfare’ refers to the state of an individual in relation to its environment, and this can be measured.” This definition is widely accepted by the scientific community specializing in the area of animal welfare and stress physiology.
  - The word “environment” is more encompassing and allows for changes in the experiences of the animal over time.

Further, the United States recommends adding the sentence as shown because it defines the mechanisms an animal can use to cope with perceived psychological, physical, social or biological stressors within their environment thereby addressing both the mental states (distress, fear, or pain) and biological function (physiology) of the animal when confronted with a stressor. These are the mechanisms by which we can and have objectively and scientifically evaluated the welfare of the animal.

~~An animal is in a good state of welfare if (as indicated by scientific evidence) it is healthy, comfortable, well nourished, safe, able to express innate behaviour, and if it is not suffering from unpleasant states such as pain, fear, and distress.~~

- The United States recommends deleting this sentence because:
  - it does not define the term “animal welfare.” Instead, it adds specific conditions required for the animal to achieve “good animal welfare”. The level of care and conditions required for an animal to achieve the minimum acceptable level of welfare should be provided in the guidelines and open for review and comment from Member countries.
  - the terms “comfortable” and “safe” are not defined and are highly subjective. Pursuant to the OIE mission of developing science-based guidelines, the United States believes such

subjective terms should be excluded from definitions, unless they are further defined and adequate science exists to allow for objective measurement.

- the sentence is not scientifically valid because for an animal to experience a continuous state of “good” welfare as prescribed in this sentence, is not a rational goal. The welfare of an animal can vary from very poor to very good as defined by Curtis (1986), Duncan (1987), and Broom (1991). Animals – including humans – naturally and normally exist from time to time in any and all of those states of being. Thus the proposed definition neither accounts for all possibilities nor explains or addresses the welfare continuum that is widely accepted by the scientific community specializing in the area of animal welfare and stress physiology.

-the sentence’s validity is further questioned because, according to this sentence, an animal must experience each and every quality at the same time for the animal to be in a good state of animal welfare. Yet, according to the Moberg (1985) model of stress, an animal must recognize the stimulus as a stressor; the animal must then elicit a biological defense against the stressor, and then recover from the consequences of the stress response. It is this last stage of the stress response that determines whether an animal is suffering from distress or merely experiencing a brief episode in its life that will have no significant impact on its welfare. An animal may experience a brief stimulus that is perceived by the animal as a stressor, but if the animal can remove or overcome the stressor with little consequence to the animal’s biological resources, the animal will not experience distress and therefore have no significant impact on its welfare.

-the requirement for an animal to simultaneously be “healthy, comfortable, well nourished, safe, able to express innate behavior, and not suffering from unpleasant states such as pain, fear, and distress” to be in a good state of welfare is impossible to achieve in reality because of the complexity of social interactions among animals. For example, dominance behavior is an innate behavior expressed by many species that can inherently create an environment that will diminish the health and welfare of co-inhabitants within the group. Studies of various species have shown that fighting to establish dominance order can cause distress and may result in injury that can be painful and compromise the health of the animal, or even result in death, obviously impacting the welfare of individuals within the social cohort. Furthermore, studies have also shown that the social order of a pig in a group can have an impact on that animal’s immune function, endocrine response, and performance well past the initial establishment of the social order. Therefore, fulfillment of all the requirements for some individuals can greatly decrease the welfare of other individuals.

~~Good animal welfare requires disease prevention and veterinary treatment, appropriate shelter, management, nutrition, humane handling and humane slaughter/killing.~~

- The United States recommends deleting this sentence from the definition for the following reasons:
  - It does not add to the definition of animal welfare. Rather it is trying to be prescriptive as to what is required for an animal to have good welfare. This is

inappropriate because it is an objective that should be reserved for the actual guidelines;

- As described in the last sentence of the proposed definition, welfare is a characteristic of an animal, not something that is given to it (Broom, 1991). The listed items may have an impact on the welfare of the animal but may not always translate into good animal welfare just because these actions are performed;
- The list of what is required for good animal welfare is not all inclusive. There are many other husbandry procedures and practices that could or should be followed to positively impact the welfare of the animal.

**To summarize, after incorporating the technical rationale describe above, the proposed definition reads as follows:**

***Animal Welfare:*** means how an animal is coping with the ~~conditions~~ environment in which it lives. Animals may use a variety of behavioral and physiological methods when trying to cope with a perceived stressor within their environment. ~~An animal is in a good state of welfare if (as indicated by scientific evidence) it is healthy, comfortable, well nourished, safe, able to express innate behaviour, and if it is not suffering from unpleasant states such as pain, fear, and distress. Good animal welfare requires disease prevention and veterinary treatment, appropriate shelter, management, nutrition, humane handling and humane slaughter/killing.~~ Animal welfare refers to the state of the animal; the treatment that an animal receives is covered by other terms such as animal care, animal husbandry and humane treatment.

**REFERENCES**

- Anderson, K.E., Adams, A.W. 1994. Effect of cage versus floor rearing environments and cage floor mesh size on bone strength, fearfulness, and production of single comb White Leghorn hens. Poult. Sci. 73(8):1233-40.
- Bayly, K.L., Evans, C.S., Taylor, A. 2006. Measuring social structure: a comparison of eight dominance indices. Behav. Processes 73(1):1-12. Epub 2006.
- Broom, D.M. 1991. Animal welfare: Concepts and measurement. J. Anim. Sci. 4167-4175.
- Cheng, H.W. 2003. Social stress in laying hens: differential effect of stress on plasma dopamine concentrations and adrenal function in genetically selected chickens. Poult. Sci. 82(2):192-8.
- Craig, J.V. 1986. Measuring social behavior: social dominance. J. Ani. Sci. 62(4):1120-9.
- Curtis, S.E. 1986. The case for intensive farming of food animals. In: M.W. Fox and L.D. Mickley (ed.) *Animal Welfare Science* 1986/87. Martinus Nijhoff, Boston. p. 245-255.

- de Groot, J., Ruis, M.A., Scholten, J.W., Koolhaas, J.M., Boersma, W.J. 2001. Long-term effects of social stress on antiviral immunity in pigs. Physiol. Behav. 73(1-2):145-58.
- Duncan, I.J.H. 1987. The welfare of farm animals: An ethological approach. *Sci. Prog.* 317.
- Fernandez, X., Meunier-Salaün, M.C., Mormede, P. 1994. Agonistic behavior, plasma stress hormones, and metabolites in response to dyadic encounters in domestic pigs: interrelationships and effect of dominance status. Physiol. Behav. 56(5):841-7.
- Hessing, M.J., Scheepens, C.J., Schouten, W.G., Tielen, M.J., Wiepkema, P.R. 1994. Social rank and disease susceptibility in pigs. Vet Immunol. Immunopathol. 43(4):373-87.
- Heo, J., Kattesh, H.G., Roberts, M.P., Morrow, J.L., Dailey, J.W., Saxton A.M. 2005. Hepatic corticosteroid-binding globulin (CBG) messenger RNA expression and plasma CBG concentrations in young pigs in response to heat and social stress. J. Anim. Sci. 83(1):208-15.
- Hicks, T.A., McGlone, J.J., Whisnant C.S., Kattesh, H.G., Norman, R.L. 1998. Behavioral, endocrine, immune, and performance measures for pigs exposed to acute stress. J. Anim. Sci. 76(2):474-83.
- Jensen, P., Andersson, L. 2005. Genomics meets ethology: a new route to understanding domestication, behavior, and sustainability in animal breeding. Ambio. 34(4-5):320-4.
- Jensen, P., Keeling, L., Schütz, K., Andersson, L., Mormède P., Brändström H., Forkman, B., Kerje, S., Fredriksson, R., Ohlsson, C., Larsson, S., Mallman, H., Kindmark, A. 2005. Feather pecking in chickens is genetically related to behavioral and developmental traits. Physiol. Behav. 15;86(1-2):52-60.
- Keeling, L.J., Estevez I., Newberry R.C., Correia M.G. 2003. Production-related traits of layers reared in different sized flocks: the concept of problematic intermediate group sizes. Poult. Sci. 82(9):1393-6.
- Kemp, B., Soede, N.M., Langendijk, P. 2005. Effects of boar contact and housing conditions on estrus expression in sows. Theriogenology 63(2):643-56. Review.
- Leone, E.H., Estèvez, I. 2008. Space use according to the distribution of resources and level of competition. Poult. Sci. 87(1):3-13.
- McGlone, J.J., Salak, J.L., Lumpkin, E.A., Nicholson, R.I., Gibson, M., Norman, R.L. 1993. Shipping stress and social status effects on pig performance, plasma cortisol, natural killer cell activity, and leukocyte numbers. J. Anim. Sci. 71(4):888-96.
- Moberg, G.P. 1985. Biological response to stress: key to assessment of animal well-being? In: Moberg, G.P. (ed.) *Animal Stress*. American Physiological Society, Bethesda, Maryland, pp. 27-49.

Morrow-Tesch, J.L., McGlone, J.J., Salak-Johnson, J.L. 1994. Heat and social stress effects on pig immune measures. J. Anim. Sci. 72(10):2599-609.

Otten, W., Puppe, B., Kanitz, E., Schön P.C., Stabenow, B. 1999. Effects of dominance and familiarity on behavior and plasma stress hormones in growing pigs during social confrontation. Zentralbl Veterinarmed A. 46(5):277-92.

Rodenburg, T.B., Tuytens, F.A., Sonck, B., De Reu, K., Herman, L., Zoons, J. 2005. Welfare, health, and hygiene of laying hens housed in furnished cages and in alternative housing systems. J. Appl. Anim. Welf. Sci. 8(3):211-26.

Salak-Johnson, J.L., McGlone, J.J. 2007. Making sense of apparently conflicting data: stress and immunity in swine and cattle. J. Anim. Sci. 85(13 Suppl): E81-8. Epub 2006 Nov. 3. Review.

Sutherland, M.A., Niekamp, S.R., Johnson, R.W., Van Alstine, W.G., Salak-Johnson, J.L. 2007. Heat and social rank impact behavior and physiology of PRRS-virus-infected pigs. Physiol. Behav. 90(1):73-81. Epub 2006 Oct 4.

Sutherland, M.A., Niekamp, S.R., Rodriguez-Zas, S.L., Salak-Johnson, J.L. 2006. Impacts of chronic stress and social status on various physiological and performance measure in pigs of different breeds. J. Anim. Sci. 84(3):588-96.

Tuchscherer, M., Puppe, B., Tuchscherer, A., Kanitz, E. 1998. Effects of social status after mixing on immune, metabolic, and endocrine responses in pigs. Physiol. Behav. 64(3):353-60.

Weitzenbürger, D., Vits, A., Hamann, H., Ditl, O. 2005. Effect of furnished small group housing systems and furnished cages on mortality and causes of death in two layer strains. Br. Poult. Sci. 46(5):553-9.

Zeltner, E., Klein T., Huber-Eicher B. Is there social transmission of feather pecking in groups of laying hen chicks? Anim. Behav. 60(2):211-216.